

# **Appendices**

**Table A-1. Growth in enrollment in higher education in selected Asian countries: 1975–90**

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Year	China	India	Japan	Singapore	South Korea	Taiwan
1975 . . .	500,993	2,300,000	2,248,903	18,501	318,683	289,435
1976 . . .	564,715	2,431,563	2,299,344	20,594	345,679	299,414
1977 . . .	625,000	2,564,972	2,336,337	20,734	404,404	308,583
1978 . . .	856,000	2,618,228	2,373,924	20,377	473,106	317,188
1979 . . .	1,020,000	2,648,579	2,412,117	20,464	553,478	329,603
1980 . . .	1,144,000	2,752,437	2,412,117	22,633	647,505	342,528
1981 . . .	1,279,000	2,952,066	2,402,725	24,393	829,915	358,437
1982 . . .	1,154,000	3,133,093	2,391,915	26,960	1,028,933	375,696
1983 . . .	1,237,394	3,322,939	2,409,983	31,145	1,204,053	395,153
1984 . . .	1,443,605	3,404,096	2,403,371	35,943	1,345,114	412,381
1985 . . .	1,778,608	3,605,029	2,347,463	39,913	1,455,759	428,576
1986 . . .	1,976,950	3,754,409	2,409,687	42,317	1,514,784	442,648
1987 . . .	2,064,910	3,910,828	2,372,124	44,976	1,548,772	464,664
1988 . . .	2,118,320	4,074,676	2,445,052	46,990	1,573,369	496,530
1989 . . .	2,173,112	4,246,878	2,528,811	50,756	1,583,076	505,152
1990 . . .	2,651,396	4,425,247	2,654,379	50,756	1,583,076	526,462

**NOTE:** Data include all levels of higher education except for India, which excludes junior colleges and Indian Institutes of Technology.

**SOURCES:** India: Government of India, University Grants Commission, 1990, *Annual Report for the Year 1988–89* (New Delhi); Taiwan: Government of the Republic of China, Ministry of Education, 1975–90, *Educational Statistics of the Republic of China*, annual series (Taipei); other countries: UNESCO, 1975–92, *Statistical Yearbook*, annual series

**Table A-2. Ratio of university enrollments to the 20- to 24-year-old population  
in selected Asian countries: 1975-90**

Page 1 of 1

Year	China	India	Japan	Singapore	South Korea	Taiwan
1975 . . . .	0.01	0.04	0.24	0.07	0.10	0.17
1976 . . . .	.01	.04	.26	.08	.11	.17
1977 . . . .	.01	.04	.27	.08	.12	.17
1978 . . . .	.01	.04	.28	.07	.13	.17
1979 . . . .	.01	.04	.30	.07	.14	.17
1980 . . . .	.01	.04	.31	.08	.16	.18
1981 . . . .	.01	.04	.30	.08	.20	.19
1982 . . . .	.01	.05	.30	.09	.25	.19
1983 . . . .	.01	.05	.30	.10	.29	.20
1984 . . . .	.01	.05	.30	.12	.32	.21
1985 . . . .	.02	.05	.29	.13	.34	.22
1986 . . . .	.02	.05	.29	.14	.36	.23
1987 . . . .	.02	.05	.28	.16	.36	.24
1988 . . . .	.02	.05	.28	.17	.37	.26
1989 . . . .	.02	.05	.29	.19	.37	.27
1990 . . . .	.02	.05	.30	.19	.37	.28

**SOURCE:** Computed, tables A-1 and A-15

**Table A-3. Bachelor's degrees in science and engineering in selected Asian countries and the United States: 1975-90**

Page 1 of 3

Year	China	India	Japan	Singapore	South Korea	Taiwan	Total	United States
Natural science								
1975 ...	NA	99,348	18,984	466	5,657	3,700	128,155	117,001
1976 ...	NA	102,661	19,977	490	5,791	4,111	133,030	120,609
1977 ...	NA	106,156	20,689	335	6,175	3,946	137,301	121,819
1978 ...	NA	109,854	21,625	347	6,699	4,126	142,651	120,238
1979 ...	NA	106,004	23,871	528	7,279	4,151	141,833	119,118
1980 ...	NA	108,054	22,736	573	7,922	4,334	143,619	117,964
1981 ...	NA	110,151	23,358	460	9,006	4,341	147,315	118,667
1982 ...	76,842	112,295	22,771	577	10,448	4,491	227,424	121,552
1983 ...	40,301	114,488	22,381	663	11,394	4,674	193,901	123,973
1984 ...	35,481	116,731	23,423	726	12,486	4,661	193,508	129,149
1985 ...	36,493	128,236	23,626	854	15,068	4,987	209,264	136,047
1986 ...	39,773	129,964	23,805	945	15,235	5,251	214,973	136,910
1987 ...	42,082	137,717	24,655	1,012	16,626	5,472	227,564	132,923
1988 ...	45,569	137,827	23,972	982	21,547	5,990	235,887	123,115
1989 ...	49,485	141,684	23,547	1,166	22,550	6,182	244,614	116,343
1990 ...	49,834	146,774	25,153	1,278	23,195	6,533	252,767	105,021
Engineering								
1975 ...	NA	14,073	66,512	236	7,155	5,000	92,976	39,824
1976 ...	NA	15,057	68,126	241	7,272	5,142	95,838	38,790
1977 ...	NA	16,110	70,431	290	7,858	5,258	99,947	41,357
1978 ...	NA	17,237	72,466	240	8,919	5,559	104,421	47,251
1979 ...	NA	17,236	75,409	272	10,124	6,315	109,356	53,469
1980 ...	NA	18,100	74,737	288	11,492	6,463	111,080	58,810
1981 ...	NA	19,007	76,370	323	13,044	7,299	116,043	63,717
1982 ...	145,263	19,959	74,774	349	14,806	7,309	262,461	67,460
1983 ...	89,726	20,960	70,824	585	20,636	7,320	210,050	72,670
1984 ...	77,388	22,010	71,640	585	22,190	7,330	201,143	76,153
1985 ...	63,132	21,088	72,560	769	23,539	7,703	188,791	77,572
1986 ...	72,703	24,096	74,516	924	27,612	7,730	207,581	76,820
1987 ...	92,994	27,057	77,077	907	27,600	7,508	233,143	74,425
1988 ...	104,271	27,000	77,503	1,001	26,891	7,994	244,660	70,154
1989 ...	116,915	28,000	77,009	1,105	28,141	8,007	259,177	66,947
1990 ...	112,814	29,000	81,355	1,220	28,071	8,950	261,410	64,705

See explanatory information and SOURCES at end of table.

**Table A-3. Bachelor's degrees in science and engineering in selected Asian countries and the United States: 1975-90**

Page 2 of 3

Year	China	India	Japan	Singapore	South Korea	Taiwan	Total	United States
Natural science and engineering								
1975 ....	NA	113,421	85,496	702	12,812	8,700	221,131	156,825
1976 ....	NA	117,718	88,103	731	13,063	9,253	228,868	159,399
1977 ....	NA	122,266	91,120	625	14,033	9,204	237,248	163,176
1978 ....	NA	127,091	94,091	587	15,619	9,685	247,073	167,489
1979 ....	NA	123,240	99,280	800	17,403	10,466	251,189	172,587
1980 ....	NA	126,154	97,473	861	19,413	10,797	254,698	176,774
1981 ....	NA	129,157	99,728	783	22,050	11,640	263,358	182,384
1982 ....	222,105	132,254	97,545	926	25,254	11,801	489,885	189,012
1983 ....	130,027	135,447	93,205	1,248	32,030	11,994	403,951	196,643
1984 ....	112,869	138,741	95,063	1,311	34,676	11,991	394,651	205,302
1985 ....	99,625	149,324	96,186	1,623	38,607	12,690	398,055	213,619
1986 ....	112,476	154,060	98,321	1,869	42,847	12,981	422,554	213,730
1987 ....	135,076	164,774	101,732	1,919	44,226	12,980	460,707	207,348
1988 ....	149,839	164,827	101,475	1,983	48,438	13,984	480,546	193,269
1989 ....	166,400	169,684	100,556	2,271	50,691	14,189	503,791	183,290
1990 ....	162,648	175,774	106,508	2,498	51,266	15,483	514,177	169,726
Science and engineering (includes social sciences)								
1975 ....	NA	113,421	220,141	702	12,812	11,300	358,376	319,972
1976 ....	NA	117,718	227,361	731	14,486	12,015	372,311	316,804
1977 ....	NA	122,266	234,536	625	15,412	12,091	384,930	311,709
1978 ....	NA	127,091	245,610	587	17,070	12,568	402,926	311,507
1979 ....	NA	123,240	257,303	800	18,931	13,421	413,695	311,490
1980 ....	NA	126,154	255,867	861	21,022	13,703	417,607	312,406
1981 ....	NA	129,157	260,248	783	23,743	14,529	428,461	314,991
1982 ....	222,105	132,254	256,995	926	27,037	14,854	654,171	322,577
1983 ....	130,027	135,447	245,201	1,248	36,327	15,028	563,278	325,294
1984 ....	112,869	138,741	246,689	1,401	37,973	15,125	552,798	331,380
1985 ....	99,625	149,324	247,258	1,709	45,079	15,955	558,950	338,652
1986 ....	112,476	154,060	249,377	1,960	50,517	16,090	584,480	341,288
1987 ....	150,761	164,774	252,688	2,025	53,093	16,277	639,618	339,283
1988 ....	169,145	164,827	252,294	2,089	58,057	17,311	663,723	329,986
1989 ....	190,162	169,684	247,643	2,373	58,789	17,348	685,999	330,027
1990 ....	187,953	175,774	263,985	2,615	61,477	18,657	710,461	329,094

See explanatory information and SOURCES at end of table.

**Table A-3. Bachelor's degrees in science and engineering in selected Asian countries and the United States: 1975-90**

Page 3 of 3

Year	China	India	Japan	Singapore	South Korea	Taiwan	Total	United States
Total, all fields								
1975 . . . .	NA	NA	313,072	2,380	NA	NA	315,452	931,663
1976 . . . .	NA	629,336	326,167	2,388	34,725	29,053	1,021,669	934,443
1977 . . . .	NA	651,999	339,819	2,357	37,374	29,685	1,061,234	928,228
1978 . . . .	NA	675,478	356,981	2,422	41,447	30,740	1,107,068	930,197
1979 . . . .	NA	620,247	374,887	2,763	45,964	32,383	1,076,243	931,340
1980 . . . .	NA	599,795	378,666	2,645	50,973	34,223	1,066,302	940,251
1981 . . . .	NA	522,963	386,057	2,187	56,528	32,214	999,949	946,877
1982 . . . .	365,787	560,893	382,466	2,395	62,688	33,341	1,407,570	964,043
1983 . . . .	252,571	595,288	369,069	2,905	77,272	34,507	1,331,612	980,679
1984 . . . .	204,248	628,453	372,247	3,725	90,888	35,714	1,335,275	986,345
1985 . . . .	201,885	646,778	373,302	4,286	118,584	36,885	1,381,720	990,880
1986 . . . .	227,764	678,470	376,260	4,818	137,848	38,567	1,463,727	1,000,352
1987 . . . .	252,122	699,555	382,655	5,119	149,582	38,929	1,527,962	1,000,532
1988 . . . .	279,084	724,739	382,828	5,227	161,983	40,205	1,594,066	1,006,033
1989 . . . .	307,865	740,000	376,688	5,850	166,845	40,856	1,638,104	1,030,171
1990 . . . .	308,930	750,000	400,103	6,000	165,916	42,952	1,673,901	1,062,151

**NOTES:** Natural science includes physical; biological; earth, atmospheric, and oceanographic; agricultural; and math and computer sciences. National data were reconfigured to include only fields of study corresponding to classification of instructional programs used in surveys of higher education in the United States. India data are estimated for 1988-90; Singapore data are estimated for 1990. China begins to report social science in 1987. India does not report social science. Singapore begins to report social science in 1984.

**KEY:** NA = Not available

**SOURCES:** UNESCO, 1975-92, *Statistical Yearbook*, annual series, supplemented by national sources; China: Government of the People's Republic of China, State Education Commission, Department of Planning and Construction, 1990, *Educational Statistics Yearbook of China* (Beijing); India: Government of India, University Grants Commission, 1990, *Annual Report for the Year 1988-89* (New Delhi), and Government of India, Department of Science and Technology, n.d., *Research and Development Statistics, 1990-91* (New Delhi); Japan: Government of Japan, Ministry of Education, Science, and Culture, 1975-90, *Monbusho Survey of Education*, annual series (Tokyo); Singapore: University of Singapore, 1974-89, *Annual Report*, annual series; South Korea: Government of the Republic of Korea, Ministry of Education, 1975-90, *Yearbook of Educational Statistics*, annual series (Seoul); Taiwan: Government of the Republic of China, Ministry of Education, 1975-90, *Educational Statistics of the Republic of China*, annual series (Taipei); United States: National Science Foundation, 1992, *Science and Engineering Degrees: 1966-90, A Source Book*, NSF 92-326 (Washington, DC)

**Table A-4. Bachelor's degrees in science and engineering earned by women  
in selected Asian countries and the United States: 1975-90**

Page 1 of 3

Year	Japan	South Korea	Taiwan	Total	United States
Natural science					
1975 .....	2,395	NA	NA	2,395	33,305
1976 .....	2,649	865	776	4,290	35,606
1977 .....	2,833	870	758	4,461	37,648
1978 .....	2,962	973	907	4,842	39,051
1979 .....	3,108	1,094	970	5,172	40,256
1980 .....	3,338	1,236	1,041	5,615	41,494
1981 .....	3,599	1,404	1,084	6,087	43,190
1982 .....	3,462	1,601	1,188	6,251	45,438
1983 .....	3,619	2,041	1,252	6,912	47,511
1984 .....	3,892	2,951	1,290	8,133	49,931
1985 .....	4,226	4,483	1,317	10,026	53,313
1986 .....	4,532	4,444	1,647	10,623	53,614
1987 .....	4,720	4,885	1,682	11,287	51,971
1988 .....	4,414	5,585	1,634	11,633	48,795
1989 .....	4,387	6,400	1,606	12,393	45,648
1990 .....	4,932	7,242	1,810	13,984	42,680
Engineering					
1975 .....	565	NA	NA	565	860
1976 .....	556	96	224	876	1,443
1977 .....	627	108	246	981	2,086
1978 .....	723	113	256	1,092	3,497
1979 .....	764	118	411	1,293	4,919
1980 .....	863	123	459	1,445	6,014
1981 .....	1,009	128	451	1,588	7,117
1982 .....	1,143	136	489	1,768	8,337
1983 .....	1,155	161	558	1,874	9,719
1984 .....	1,506	470	636	2,612	10,833
1985 .....	1,706	312	713	2,731	11,316
1986 .....	2,027	315	539	2,881	11,203
1987 .....	2,359	598	657	3,614	11,473
1988 .....	2,431	842	723	3,996	10,840
1989 .....	2,531	1,098	715	4,344	10,244
1990 .....	2,650	1,308	840	4,798	9,973

See explanatory information and SOURCES at end of table.

**Table A-4. Bachelor's degrees in science and engineering earned by women  
in selected Asian countries and the United States: 1975-90**

Page 2 of 3

Year	Japan	South Korea	Taiwan	Total	United States
Natural science and engineering					
1975 .....	2,960	NA	NA	2,960	34,165
1976 .....	3,205	961	1,000	5,166	37,049
1977 .....	3,460	978	1,004	5,442	39,734
1978 .....	3,685	1,086	1,163	5,934	42,548
1979 .....	3,872	1,212	1,381	6,465	45,175
1980 .....	4,201	1,359	1,500	7,060	47,508
1981 .....	4,608	1,532	1,535	7,675	50,307
1982 .....	4,605	1,737	1,677	8,019	53,775
1983 .....	4,774	2,202	1,810	8,786	57,230
1984 .....	5,398	3,421	1,926	10,745	60,764
1985 .....	5,932	4,795	2,030	12,757	64,629
1986 .....	6,559	4,759	2,186	13,504	64,817
1987 .....	7,079	5,483	2,339	14,901	63,444
1988 .....	6,845	6,427	2,357	15,629	59,635
1989 .....	6,918	7,498	2,321	16,737	55,892
1990 .....	7,582	8,550	2,650	18,782	52,653
Science and engineering (includes social sciences)					
1975 .....	12,226	NA	NA	12,226	104,256
1976 .....	13,841	1,226	2,175	17,242	106,000
1977 .....	15,373	1,221	2,291	18,885	107,394
1978 .....	16,891	1,340	2,390	20,621	110,276
1979 .....	18,112	1,477	2,709	22,298	112,715
1980 .....	18,464	1,636	2,951	23,051	116,131
1981 .....	19,406	1,822	3,000	24,228	118,693
1982 .....	18,535	2,040	3,157	23,732	124,080
1983 .....	18,282	2,654	3,418	24,354	125,489
1984 .....	18,996	3,973	3,605	26,574	127,283
1985 .....	19,558	6,180	3,790	29,528	130,892
1986 .....	20,325	6,684	3,886	30,895	132,532
1987 .....	22,018	8,026	4,151	34,195	133,879
1988 .....	23,052	9,092	4,182	36,326	133,220
1989 .....	23,105	9,434	4,249	36,788	135,741
1990 .....	26,101	11,182	4,657	41,940	140,012

See explanatory information and SOURCES at end of table.

**Table A-4. Bachelor's degrees in science and engineering earned by women in selected Asian countries and the United States: 1975–90**

Page 3 of 3

Year	Japan	South Korea	Taiwan	Total	United States
Total, all fields					
1975 .....	67,540	NA	NA	67,540	423,239
1976 .....	74,146	11,198	10,309	95,653	425,894
1977 .....	80,539	12,160	11,016	103,715	429,107
1978 .....	86,131	13,187	11,135	110,453	439,135
1979 .....	91,660	14,301	12,070	118,031	449,946
1980 .....	93,698	15,509	12,780	121,987	462,501
1981 .....	95,543	16,819	12,948	125,310	472,541
1982 .....	92,580	18,240	13,333	124,153	486,500
1983 .....	90,097	22,703	15,299	128,099	497,284
1984 .....	91,452	27,738	15,602	134,792	499,595
1985 .....	92,367	42,771	16,431	151,569	504,217
1986 .....	93,679	50,607	16,987	161,273	510,061
1987 .....	99,040	57,840	17,983	174,863	518,529
1988 .....	100,271	58,704	17,831	176,806	524,797
1989 .....	100,640	59,836	18,459	178,935	542,605
1990 .....	109,750	61,289	19,396	190,435	566,284

**NOTES:** Natural science includes physical; biological; earth, atmospheric, and oceanographic; agricultural; and math and computer sciences. National data were reconfigured to include only fields of study corresponding to classification of instructional programs used in surveys of higher education in the United States. China and India do not report degree data by gender; Singapore data are incomplete.

**KEY:** NA = Not available

**SOURCES:** UNESCO, 1975–92, *Statistical Yearbook*, annual series, supplemented by national sources; Japan: Government of Japan, Ministry of Education, Science, and Culture, 1975–90, *Monbusho Survey of Education*, annual series (Tokyo); South Korea: Government of the Republic of Korea, Ministry of Education, 1975–90, *Yearbook of Educational Statistics*, annual series (Seoul); Taiwan: Government of the Republic of China, Ministry of Education, 1975–90, *Educational Statistics of the Republic of China*, annual series (Taipei); United States: National Science Foundation, 1992, *Science and Engineering Degrees: 1966–90, A Source Book*, NSF 92-326 (Washington, DC)

**Table A-5. Advanced degrees (master's and doctoral) in science and engineering in selected Asian countries and the United States: 1975–90**

Page 1 of 3

Year	China	India	Japan	Singapore	South Korea	Taiwan	Total	United States
Natural science								
1975 . . . . .	NA	20,625	3,047	18	NA	NA	23,690	31,335
1976 . . . . .	NA	21,130	3,102	11	414	448	25,105	30,640
1977 . . . . .	NA	21,700	3,500	9	487	460	26,156	31,188
1978 . . . . .	NA	22,345	3,585	8	727	529	27,194	31,268
1979 . . . . .	NA	22,564	3,555	7	822	490	27,438	31,080
1980 . . . . .	69	23,315	3,553	6	967	527	28,437	30,852
1981 . . . . .	2,452	24,094	3,590	7	1,186	654	31,983	30,774
1982 . . . . .	739	24,901	3,543	2	1,109	691	30,985	32,151
1983 . . . . .	858	25,738	3,757	8	1,569	692	32,622	32,350
1984 . . . . .	482	26,607	4,578	11	1,718	697	34,093	33,166
1985 . . . . .	4,522	27,660	4,903	11	2,472	762	40,330	33,981
1986 . . . . .	3,324	28,818	4,963	13	2,283	945	40,346	35,336
1987 . . . . .	6,234	30,060	5,200	31	2,484	1,019	45,028	36,120
1988 . . . . .	6,060	30,458	5,529	46	2,726	1,177	45,996	37,241
1989 . . . . .	6,943	30,849	6,110	46	2,659	1,354	47,961	37,607
1990 . . . . .	6,760	32,800	11,639	50	3,056	1,604	55,909	37,621
Engineering								
1975 . . . . .	NA	1,364	6,721	5	NA	NA	8,090	18,445
1976 . . . . .	NA	1,563	6,440	42	319	265	8,629	19,008
1977 . . . . .	NA	1,794	7,705	45	334	314	10,192	19,537
1978 . . . . .	NA	2,062	8,355	49	464	403	11,333	19,440
1979 . . . . .	NA	2,086	8,358	53	645	395	11,537	18,687
1980 . . . . .	205	2,091	7,879	57	896	485	11,613	19,325
1981 . . . . .	3,515	2,095	7,733	64	1,246	528	15,181	19,901
1982 . . . . .	793	2,100	8,061	72	1,731	634	13,391	21,240
1983 . . . . .	1,348	2,105	8,367	148	2,012	761	14,741	22,502
1984 . . . . .	1,011	2,110	8,952	132	2,191	914	15,310	23,265
1985 . . . . .	4,971	1,935	9,251	135	2,504	1,151	19,947	24,372
1986 . . . . .	5,026	2,675	10,303	155	2,844	1,362	22,365	24,690
1987 . . . . .	11,051	3,162	11,137	157	3,037	1,551	30,095	25,993
1988 . . . . .	12,850	2,829	11,956	151	3,852	1,868	33,506	27,081
1989 . . . . .	14,943	2,933	12,954	132	4,020	2,071	37,053	28,464
1990 . . . . .	14,027	3,050	24,910	150	4,014	2,407	48,558	28,887

See explanatory information and SOURCES at end of table.

**Table A-5. Advanced degrees (master's and doctoral) in science and engineering in selected Asian countries and the United States: 1975–90**

Page 2 of 3

Year	China	India	Japan	Singapore	South Korea	Taiwan	Total	United States
Natural science and engineering								
1975 . . . . .	NA	21,989	9,768	23	NA	NA	31,780	49,780
1976 . . . . .	NA	22,693	9,542	53	733	713	33,734	49,648
1977 . . . . .	NA	23,494	11,205	55	821	774	36,349	50,725
1978 . . . . .	NA	24,407	11,940	57	1,191	932	38,527	50,708
1979 . . . . .	NA	24,650	11,913	60	1,467	885	38,975	49,767
1980 . . . . .	274	25,406	11,432	63	1,863	1,012	40,050	50,177
1981 . . . . .	5,967	26,189	11,323	71	2,432	1,182	47,164	50,675
1982 . . . . .	1,532	27,001	11,604	74	2,840	1,325	44,376	53,391
1983 . . . . .	2,206	27,844	12,124	156	3,581	1,454	47,364	54,852
1984 . . . . .	1,493	28,717	13,530	143	3,909	1,611	49,403	56,431
1985 . . . . .	9,493	29,595	14,154	146	4,976	1,913	60,227	58,353
1986 . . . . .	8,350	31,493	15,266	168	5,127	2,307	62,711	60,026
1987 . . . . .	17,285	33,222	16,337	188	5,521	2,570	75,123	62,113
1988 . . . . .	18,910	33,287	17,485	197	6,578	3,045	79,502	64,322
1989 . . . . .	21,886	33,782	19,064	178	6,679	3,425	85,014	66,071
1990 . . . . .	20,787	35,850	36,549	200	7,070	4,011	104,467	66,508
Science and engineering (includes social science)								
1975 . . . . .	NA	21,989	11,940	23	NA	NA	33,952	82,815
1976 . . . . .	NA	22,693	11,706	53	894	920	36,266	84,046
1977 . . . . .	NA	23,494	13,250	55	939	1,013	38,751	86,712
1978 . . . . .	NA	24,407	14,062	57	1,335	1,160	41,022	86,355
1979 . . . . .	NA	24,650	14,005	60	1,645	1,079	41,438	83,504
1980 . . . . .	274	25,406	13,535	63	2,081	1,241	42,600	83,221
1981 . . . . .	5,967	26,189	13,448	71	2,699	1,761	50,135	83,994
1982 . . . . .	1,532	27,001	13,571	74	3,089	1,789	47,056	86,291
1983 . . . . .	2,206	27,844	14,059	158	3,983	1,826	50,075	87,602
1984 . . . . .	1,493	28,717	15,533	147	4,436	1,909	52,235	87,983

See explanatory information and SOURCES at end of table.

**Table A-5. Advanced degrees (master's and doctoral) in science and engineering in selected Asian countries and the United States: 1975–90**

Page 3 of 3

Year	China	India	Japan	Singapore	South Korea	Taiwan	Total	United States
Science and engineering (includes social science)								
1985 . . . . .	9,493	29,595	16,333	157	5,801	2,283	63,662	90,117
1986 . . . . .	8,350	31,493	17,441	175	5,975	2,679	66,113	91,901
1987 . . . . .	18,852	33,222	18,619	194	6,344	3,000	80,231	93,618
1988 . . . . .	20,661	33,287	19,906	204	7,376	3,497	84,931	95,606
1989 . . . . .	23,843	33,782	21,624	184	7,495	3,711	90,639	99,059
1990 . . . . .	22,579	35,850	41,530	206	7,986	4,288	112,439	100,639

**NOTES:** Natural science includes physical; biological; earth, atmospheric, and oceanographic; agricultural; and math and computer sciences. National data were reconfigured to include only fields of study corresponding to classification of instructional programs used in surveys of higher education in the United States. India data are estimated for 1988–90; Singapore data are estimated for 1990.

**KEY:** NA = Not available

**SOURCES:** UNESCO, 1975–92, *Statistical Yearbook*, annual series, supplemented by national sources; China: Government of the People's Republic of China, State Education Commission, Department of Planning and Construction, 1990, *Educational Statistics Yearbook of China* (Beijing); India: Government of India, University Grants Commission, 1990, *Annual Report for the Year 1988–89* (New Delhi), and Government of India, Department of Science and Technology, n.d., *Research and Development Statistics, 1990–91* (New Delhi); Japan: Government of Japan, Ministry of Education, Science, and Culture, 1975–90, *Monbusho Survey of Education*, annual series (Tokyo); Singapore: University of Singapore, 1974–89, *Annual Report*, annual series; South Korea: Government of the Republic of Korea, Ministry of Education, 1975–90, *Yearbook of Educational Statistics*, annual series (Seoul); Taiwan: Government of the Republic of China, Ministry of Education, 1975–90, *Educational Statistics of the Republic of China*, annual series (Taipei); United States: National Science Foundation, 1992, *Science and Engineering Degrees: 1966–90, A Source Book*, NSF 92-326 (Washington, DC)

**Table A-6. Advanced degrees (master's and doctoral) in science and engineering earned by women in selected Asian countries and the United States: 1975-90**

Page 1 of 3

Year	Japan	South Korea	Taiwan	Total	United States
Natural science					
1975 .....	182	NA	NA	182	6,140
1976 .....	181	41	68	290	6,258
1977 .....	222	46	62	330	6,766
1978 .....	210	63	74	347	7,077
1979 .....	238	87	76	401	7,379
1980 .....	274	120	83	477	7,555
1981 .....	273	165	91	529	7,699
1982 .....	238	227	110	575	8,590
1983 .....	293	252	126	671	9,037
1984 .....	474	269	149	892	9,488
1985 .....	515	535	182	1,232	9,853
1986 .....	538	609	209	1,356	10,531
1987 .....	613	786	208	1,607	10,907
1988 .....	690	387	259	1,336	10,979
1989 .....	843	467	327	1,637	11,630
1990 .....	1,533	563	358	2,454	11,946
Engineering					
1975 .....	24	NA	NA	24	424
1976 .....	36	5	4	45	623
1977 .....	38	3	6	47	772
1978 .....	39	5	7	51	896
1979 .....	62	7	7	76	999
1980 .....	64	11	11	86	1,213
1981 .....	80	17	18	115	1,428
1982 .....	83	26	20	129	1,699
1983 .....	86	27	22	135	1,879
1984 .....	119	20	24	163	2,251
1985 .....	129	41	32	202	2,442
1986 .....	180	70	50	300	2,625
1987 .....	198	43	58	299	3,012
1988 .....	263	63	58	384	3,094
1989 .....	318	80	94	492	3,457
1990 .....	581	123	116	820	3,683

See explanatory information and SOURCES at end of table.

**Table A-6. Advanced degrees (master's and doctoral) in science and engineering earned by women in selected Asian countries and the United States: 1975–90**

Page 2 of 3

Year	Japan	South Korea	Taiwan	Total	United States
Natural science and engineering					
1975 .....	206	NA	NA	206	6,564
1976 .....	217	46	72	335	6,881
1977 .....	260	49	68	377	7,538
1978 .....	249	68	81	398	7,973
1979 .....	300	94	83	477	8,378
1980 .....	338	131	94	563	8,768
1981 .....	353	182	109	644	9,127
1982 .....	321	253	130	704	10,289
1983 .....	379	279	148	806	10,916
1984 .....	593	289	173	1,055	11,739
1985 .....	644	576	214	1,434	12,295
1986 .....	718	679	259	1,656	13,156
1987 .....	811	829	266	1,906	13,919
1988 .....	953	450	317	1,720	14,073
1989 .....	1,161	547	421	2,129	15,087
1990 .....	2,114	686	474	3,274	15,629
Science and engineering (includes social sciences)					
1975 .....	342	NA	NA	342	16,717
1976 .....	350	65	97	512	18,112
1977 .....	389	62	107	558	19,731
1978 .....	424	82	126	632	20,684
1979 .....	481	109	117	707	21,356
1980 .....	547	147	141	835	22,046
1981 .....	560	199	217	976	23,062
1982 .....	536	271	231	1,038	24,361
1983 .....	621	318	243	1,182	25,713
1984 .....	834	318	263	1,415	26,323

See explanatory information and SOURCES at end of table.

**Table A-6. Advanced degrees (master's and doctoral) in science and engineering earned by women in selected Asian countries and the United States: 1975–90**

Page 3 of 3

Year	Japan	South Korea	Taiwan	Total	United States
Science and engineering (includes social sciences)					
1985 .....	955	685	307	1,947	27,221
1986 .....	1,055	799	380	2,234	28,386
1987 .....	1,179	986	417	2,582	29,154
1988 .....	1,373	567	471	2,411	29,438
1989 .....	1,642	657	517	2,816	31,686
1990 .....	3,015	845	588	4,448	32,902

**NOTES:** Natural science includes physical; biological; earth, atmospheric, and oceanographic; agricultural; and math and computer sciences. National data were reconfigured to include only fields of study corresponding to classification of instructional programs used in surveys of higher education in the United States. China and India do not report degree data by gender; Singapore data are incomplete.

**SOURCES:** UNESCO, 1975–92, *Statistical Yearbook*, annual series, supplemented by national sources; Japan: Government of Japan, Ministry of Education, Science, and Culture, 1975–90, *Monbusho Survey of Education*, annual series (Tokyo); South Korea: Government of the Republic of Korea, Ministry of Education, 1975–90, *Yearbook of Educational Statistics*, annual series (Seoul); Taiwan: Government of the Republic of China, Ministry of Education, 1975–90, *Educational Statistics of the Republic of China*, annual series (Taipei); United States: National Science Foundation, 1992, *Science and Engineering Degrees: 1966–90, A Source Book*, NSF 92-326 (Washington, DC)

**Table A-7. Doctoral degrees in science and engineering in selected Asian countries and the United States: 1975–90**

Page 1 of 3

Year	China	India	Japan	South Korea	Taiwan	Total	United States
Natural science							
1975 . . . . .	NA	1,773	669	NA	NA	2,442	9,250
1976 . . . . .	NA	1,979	638	77	6	2,700	8,866
1977 . . . . .	NA	2,209	768	62	8	3,047	8,640
1978 . . . . .	NA	2,466	743	73	12	3,294	8,560
1979 . . . . .	NA	2,741	753	86	12	3,592	8,796
1980 . . . . .	NA	2,903	785	104	12	3,803	8,826
1981 . . . . .	NA	3,074	861	127	24	4,085	8,956
1982 . . . . .	NA	3,255	807	157	16	4,235	9,135
1983 . . . . .	NA	3,448	782	143	29	4,402	9,182
1984 . . . . .	NA	3,652	743	201	31	4,627	9,329
1985 . . . . .	NA	3,620	833	301	34	4,788	9,433
1986 . . . . .	NA	3,530	772	306	63	4,671	9,613
1987 . . . . .	NA	3,870	828	387	77	5,162	9,843
1988 . . . . .	NA	3,958	851	435	77	5,321	10,431
1989 . . . . .	646	4,049	1,007	472	96	6,270	10,652
1990 . . . . .	772	4,600	937	399	104	6,812	11,368
Engineering							
1975 . . . . .	NA	136	576	NA	NA	712	3,011
1976 . . . . .	NA	135	558	20	8	721	2,838
1977 . . . . .	NA	135	672	14	3	824	2,648
1978 . . . . .	NA	134	591	20	3	748	2,425
1979 . . . . .	NA	176	665	29	8	878	2,494
1980 . . . . .	NA	179	665	42	10	896	2,479
1981 . . . . .	NA	182	697	60	15	955	2,528
1982 . . . . .	NA	185	634	87	15	921	2,646
1983 . . . . .	NA	189	591	97	14	891	2,781
1984 . . . . .	NA	192	575	120	31	918	2,913
1985 . . . . .	NA	194	559	197	59	1,009	3,166
1986 . . . . .	NA	215	599	273	83	1,170	3,376
1987 . . . . .	NA	225	642	270	98	1,235	3,711
1988 . . . . .	NA	229	736	346	98	1,409	4,189
1989 . . . . .	971	233	930	415	120	2,669	4,536
1990 . . . . .	1,054	250	948	439	165	2,856	4,892

See explanatory information and SOURCES at end of table.

**Table A-7. Doctoral degrees in science and engineering in selected Asian countries and the United States: 1975–90**

Page 2 of 3

Year	China	India	Japan	South Korea	Taiwan	Total	United States
Natural science and engineering							
1975 . . . . .	NA	1,909	1,245	NA	NA	3,154	12,261
1976 . . . . .	NA	2,114	1,196	97	14	3,421	11,704
1977 . . . . .	NA	2,344	1,440	76	11	3,871	11,288
1978 . . . . .	NA	2,600	1,334	93	15	4,042	10,985
1979 . . . . .	NA	2,917	1,418	115	20	4,470	11,290
1980 . . . . .	NA	3,082	1,450	146	22	4,699	11,305
1981 . . . . .	NA	3,256	1,558	187	39	5,040	11,484
1982 . . . . .	NA	3,441	1,441	244	31	5,157	11,781
1983 . . . . .	NA	3,637	1,373	240	43	5,293	11,963
1984 . . . . .	NA	3,844	1,318	321	62	5,545	12,242
1985 . . . . .	NA	3,814	1,392	498	93	5,797	12,599
1986 . . . . .	NA	3,745	1,371	579	146	5,841	12,989
1987 . . . . .	NA	4,095	1,470	657	175	6,397	13,554
1988 . . . . .	NA	4,187	1,587	781	175	6,730	14,620
1989 . . . . .	1,617	4,282	1,937	887	216	8,939	15,188
1990 . . . . .	1,826	4,850	1,885	838	269	9,668	16,260
Science and engineering (includes social sciences)							
1975 . . . . .	NA	1,909	1,689	NA	NA	3,598	18,701
1976 . . . . .	NA	2,114	1,695	128	21	3,958	18,268
1977 . . . . .	NA	2,344	1,891	99	24	4,358	17,723
1978 . . . . .	NA	2,600	1,788	116	17	4,521	17,383
1979 . . . . .	NA	2,917	1,864	139	26	4,946	17,589
1980 . . . . .	NA	3,082	1,914	170	30	5,195	17,524
1981 . . . . .	NA	3,256	2,081	212	49	5,598	17,996
1982 . . . . .	NA	3,441	1,961	269	44	5,715	18,017
1983 . . . . .	NA	3,637	1,832	281	58	5,808	18,393
1984 . . . . .	NA	3,844	1,785	360	85	6,074	18,514
1985 . . . . .	NA	3,814	1,915	548	109	6,386	18,710
1986 . . . . .	NA	3,745	1,861	631	172	6,409	19,252
1987 . . . . .	NA	4,095	1,959	759	197	7,010	19,703
1988 . . . . .	NA	4,187	2,123	871	197	7,378	20,735
1989 . . . . .	1,679	4,282	2,438	984	257	9,640	21,516
1990 . . . . .	1,940	4,850	2,367	945	312	10,414	22,853

**NOTES:** Natural science includes physical; biological; earth, atmospheric, and oceanographic; agricultural; and math and computer sciences. National data were reconfigured to include only fields of

**Table A-7. Doctoral degrees in science and engineering in selected Asian countries and the United States: 1975–90**

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study corresponding to classification of instructional programs used in surveys of higher education in the United States. China and India do not include social science degrees in reporting science and engineering degrees.

**KEY:** NA = Not available

**SOURCES:** UNESCO, 1975–92, *Statistical Yearbook*, annual series, supplemented by national sources; China: Government of the People's Republic of China, State Education Commission, Department of Planning and Construction, 1990, *Educational Statistics Yearbook of China* (Beijing); India: Government of India, University Grants Commission, 1990, *Annual Report for the Year 1988–89* (New Delhi), and Government of India, Department of Science and Technology, 1990, *Research and Development Statistics, 1988–89* (New Delhi); Japan: Government of Japan, Ministry of Education, Science, and Culture, 1975–90, *Monbusho Survey of Education*, annual series (Tokyo); South Korea: Government of the Republic of Korea, Ministry of Education, 1975–90, *Yearbook of Educational Statistics*, annual series (Seoul); Taiwan: Government of the Republic of China, Ministry of Education, 1975–90, *Educational Statistics of the Republic of China*, annual series (Taipei); United States: National Science Foundation, 1992, *Science and Engineering Degrees: 1966–90, A Source Book*, NSF 92-326 (Washington, DC)

**Table A-8. Doctoral degrees in science and engineering earned by women  
in selected Asian countries and the United States: 1975-90**

Page 1 of 3

Year	Japan	South Korea	Taiwan	Total	United States
Natural science					
1975 .....	30	0	0	30	1,252
1976 .....	30	4	0	34	1,272
1977 .....	34	2	0	36	1,273
1978 .....	35	0	1	36	1,397
1979 .....	36	0	1	37	1,527
1980 .....	40	0	1	41	1,652
1981 .....	40	0	1	41	1,724
1982 .....	37	15	2	54	1,868
1983 .....	42	19	2	63	1,983
1984 .....	57	21	3	81	2,005
1985 .....	51	24	1	76	2,123
1986 .....	47	37	10	94	2,226
1987 .....	73	71	9	153	2,362
1988 .....	65	31	9	105	2,570
1989 .....	88	39	11	138	2,799
1990 .....	97	36	16	149	2,919
Engineering					
1975 .....	2	0	0	2	52
1976 .....	4	0	0	4	55
1977 .....	3	0	0	3	74
1978 .....	3	0	1	4	53
1979 .....	6	0	0	6	62
1980 .....	8	0	0	8	90
1981 .....	6	0	0	6	99
1982 .....	7	0	0	7	124
1983 .....	14	0	0	14	124
1984 .....	10	0	0	10	151
1985 .....	12	7	4	23	198
1986 .....	20	9	0	29	225
1987 .....	16	2	3	21	242
1988 .....	12	11	3	26	286
1989 .....	35	5	4	44	375
1990 .....	41	8	1	50	414

See explanatory information and SOURCES at end of table.

**Table A-8. Doctoral degrees in science and engineering earned by women in selected Asian countries and the United States: 1975–90**

Page 2 of 3

Year	Japan	South Korea	Taiwan	Total	United States
Natural science and engineering					
1975 .....	32	0	0	32	1,304
1976 .....	34	4	0	38	1,327
1977 .....	37	2	0	39	1,347
1978 .....	38	0	2	40	1,450
1979 .....	42	0	1	43	1,589
1980 .....	48	0	1	49	1,742
1981 .....	46	0	1	47	1,823
1982 .....	44	15	2	61	1,992
1983 .....	56	19	2	77	2,107
1984 .....	67	21	3	91	2,156
1985 .....	63	31	5	99	2,321
1986 .....	67	46	10	123	2,451
1987 .....	89	73	12	174	2,604
1988 .....	77	42	13	132	2,856
1989 .....	123	44	15	182	3,174
1990 .....	138	44	17	199	3,333
Science and engineering (includes social sciences)					
1975 .....	50	0	0	50	2,929
1976 .....	54	4	0	58	3,097
1977 .....	57	2	1	60	3,233
1978 .....	59	0	3	62	3,454
1979 .....	69	0	1	70	3,744
1980 .....	84	0	2	86	3,961
1981 .....	86	0	2	88	4,201
1982 .....	73	15	3	91	4,350
1983 .....	83	20	4	107	4,715
1984 .....	105	21	4	130	4,792
1985 .....	108	34	6	148	4,891
1986 .....	108	53	11	172	5,166
1987 .....	146	78	17	241	5,310
1988 .....	136	46	16	198	5,657
1989 .....	183	53	17	253	6,106
1990 .....	200	52	21	273	6,344

**NOTES:** Natural science includes physical; biological; earth, atmospheric, and oceanographic; agricultural; and math and computer sciences. National data were reconfigured to include only

**Table A-8. Doctoral degrees in science and engineering earned by women  
in selected Asian countries and the United States: 1975-90**

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fields of study corresponding to classification of instructional programs used in surveys of higher education in the United States. China and India do not report degree data by gender; Singapore data are incomplete.

**SOURCES:** UNESCO, 1975-92, *Statistical Yearbook*, annual series, supplemented by national sources; China: Government of the People's Republic of China, State Education Commission, Department of Planning and Construction, 1990, *Educational Statistics Yearbook of China* (Beijing); India: Government of India, University Grants Commission, 1990, *Annual Report for the Year 1988-89* (New Delhi), and Government of India, Department of Science and Technology, 1990, *Research and Development Statistics, 1988-89* (New Delhi); Japan: Government of Japan, Ministry of Education, Science, and Culture, 1975-90, *Monbusho Survey of Education*, annual series (Tokyo); South Korea: Government of the Republic of Korea, Ministry of Education, 1975-90, *Yearbook of Educational Statistics*, annual series (Seoul); Taiwan: Government of the Republic of China, Ministry of Education, 1975-90, *Educational Statistics of the Republic of China*, annual series (Taipei); United States: National Science Foundation, 1992, *Science and Engineering Degrees: 1966-90, A Source Book*, NSF 92-326 (Washington, DC)